Detector & Data Taking Status

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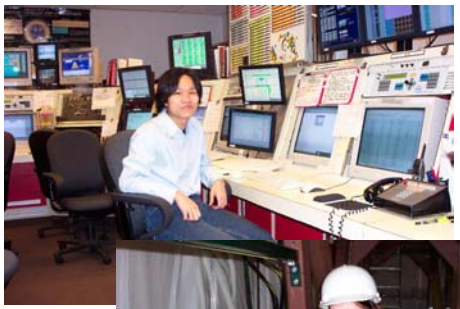
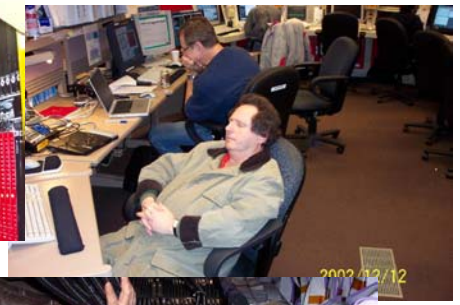






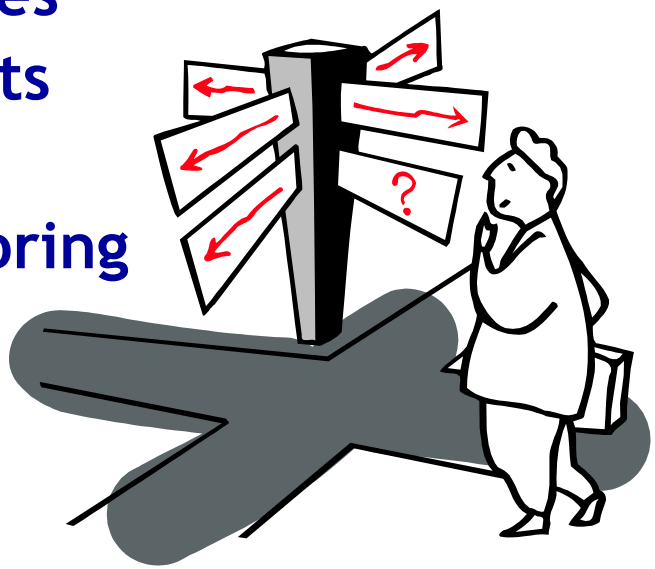



D0 at Work!

Run IIa Operations Page

http://www-d0.fnal.gov/runcoor/

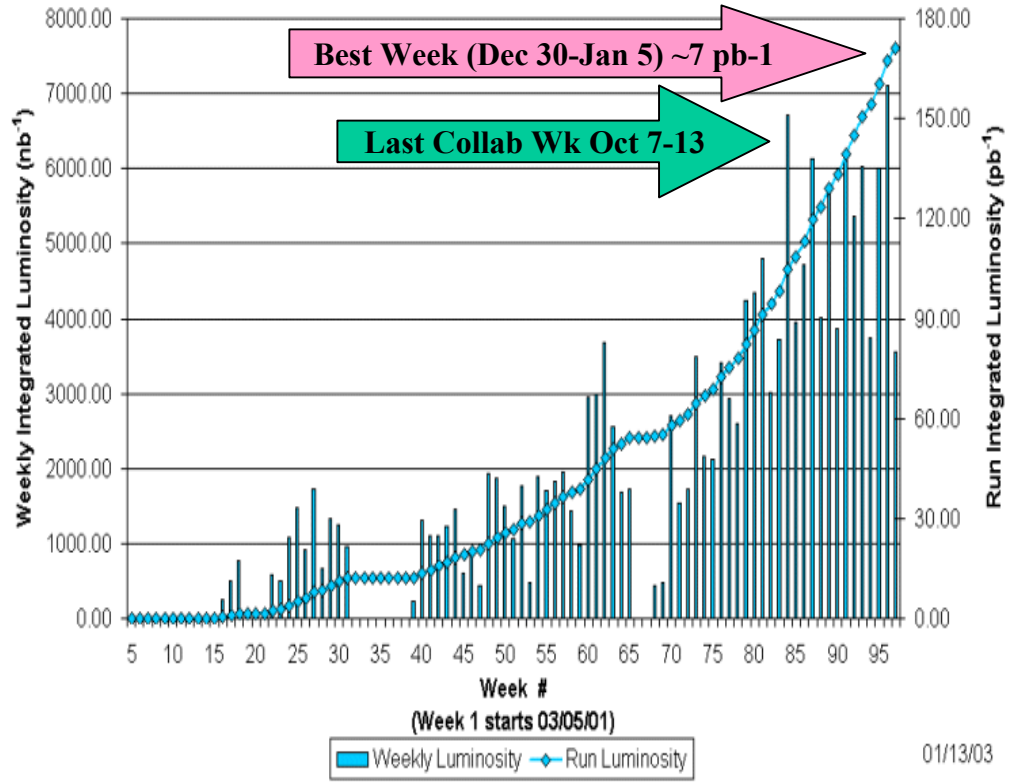
- Daily Run Plan
- Data Taking Status
- Detector & Trigger Status
- Luminosity Reports
- Shift Schedules
- Current Events
- Physics Runs
- Global Monitoring
- Trigger Rates
- Run II Bests
- Run II Stores
- Alarm Reports
- Live Event Display



- Photographs
- Shifter Tutorials
- Mailing Lists
- Data Quality
- Data Access
- Databases
- All Experimenters Mtg
- Tevatron Operations
- Beams Status
- MCR E-Log
- CDF Operations

I have been asked to summarize 100k+ man-hours over 4 months in 20 minutes…

Tevatron Performance



- **DØ Record Initial Luminosities**
  - 06 Jul 2002 - Store 1499 - 1.99E31
  - 25 Jul 2002 - Store 1580 - 2.08E31
  - 26 Jul 2002 - Store 1583 - 2.48E31
  - 21 Sep 2002 - Store 1775 - 2.70E31
  - 24 Sep 2002 - Store 1787 - 2.83E31
  - 07 Oct 2002 - Store 1832 - 2.90E31
  - 08 Oct 2002 - Store 1834 - 3.23E31
  - 09 Oct 2002 - Store 1836 - 3.45E31
  - 08 Nov 2002 - Store 1953 - 3.54E31

Initial Lumi (E31)	Store	Start Time	End Time
3.54	1953	2002 Nov 08 22:15	2002 Nov 09 20:32
3.48	1955	2002 Nov 10 14:12	2002 Nov 11 12:04
3.45	1836	2002 Oct 09 08:50	2002 Oct 10 05:20
3.36	1843	2002 Oct 12 20:53	2002 Oct 13 01:08
3.34	1886	2002 Oct 19 22:59	2002 Oct 20 20:55
3.26	1961	2002 Nov 13 07:01	2002 Nov 14 07:58
3.23	1834	2002 Oct 08 11:17	2002 Oct 09 03:23
3.22	1921	2002 Oct 29 12:16	2002 Oct 30 12:58
3.20	1957	2002 Nov 11 18:49	2002 Nov 12 11:58
3.20	1865	2002 Oct 17 11:14	2002 Oct 17 20:59
3.16	2103	2002 Dec 25 15:58	2002 Dec 26 16:00
3.13	2070	2002 Dec 12 04:00	2002 Dec 13 00:03
3.12	1841	2002 Oct 11 16:27	2002 Oct 12 14:58
3.11	2094	2002 Dec 22 12:37	2002 Dec 22 19:02
3.09	1918	2002 Oct 28 13:16	2002 Oct 29 07:38
3.06	1999	2002 Nov 26 01:34	2002 Nov 26 22:00
3.06	2113	2002 Dec 29 06:44	2002 Dec 29 23:59
3.05	2015	2002 Dec 01 00:25	2002 Dec 01 07:27
3.01	2074	2002 Dec 15 04:17	2002 Dec 16 05:01

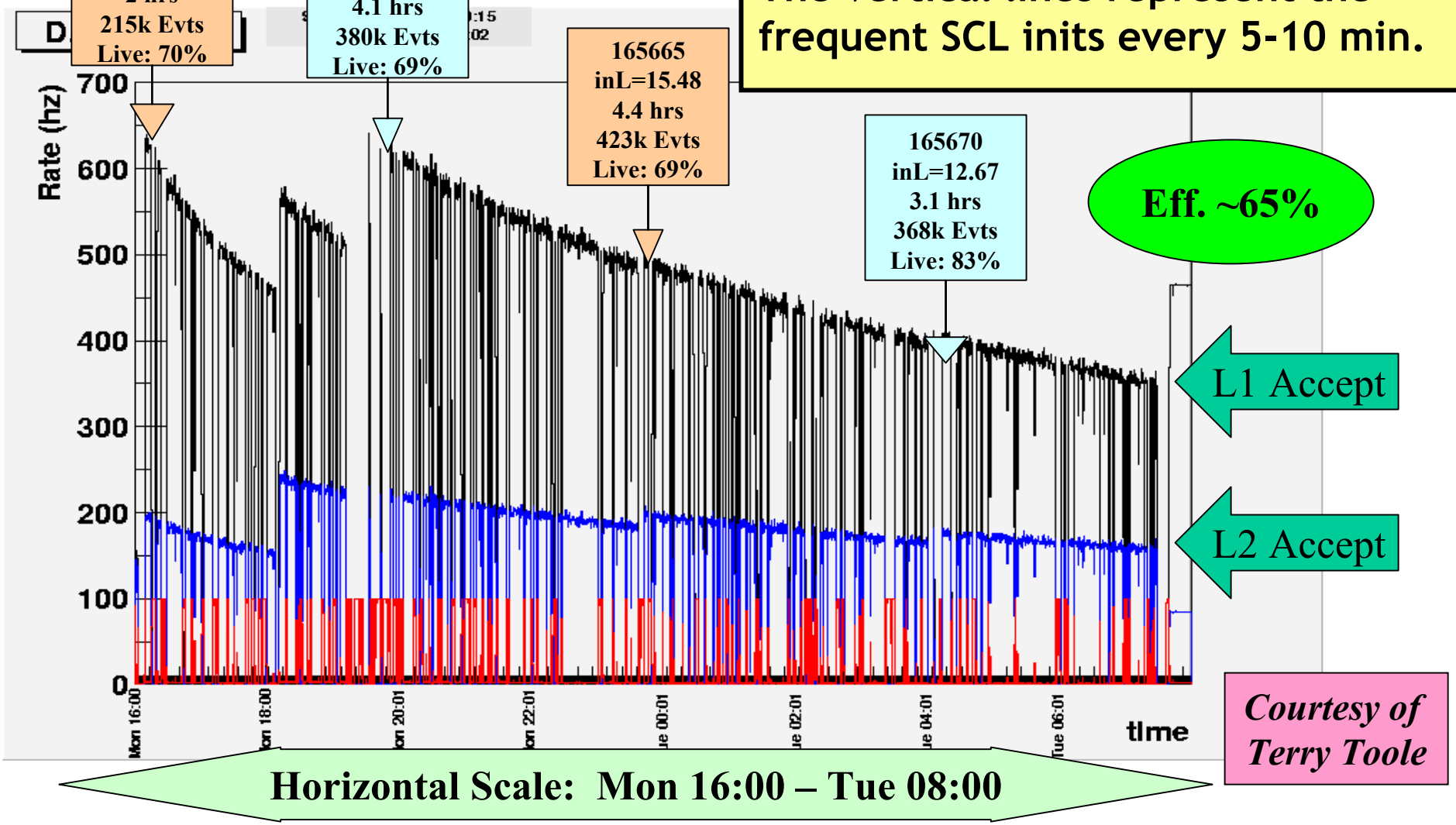
Alternate weeks of Stack 'N Store with Beam Studies

No new Record Luminosities since Nov 8th. But half of the Best Stores with an Initial Luminosity > 3E31 were delivered since.

Store 1832

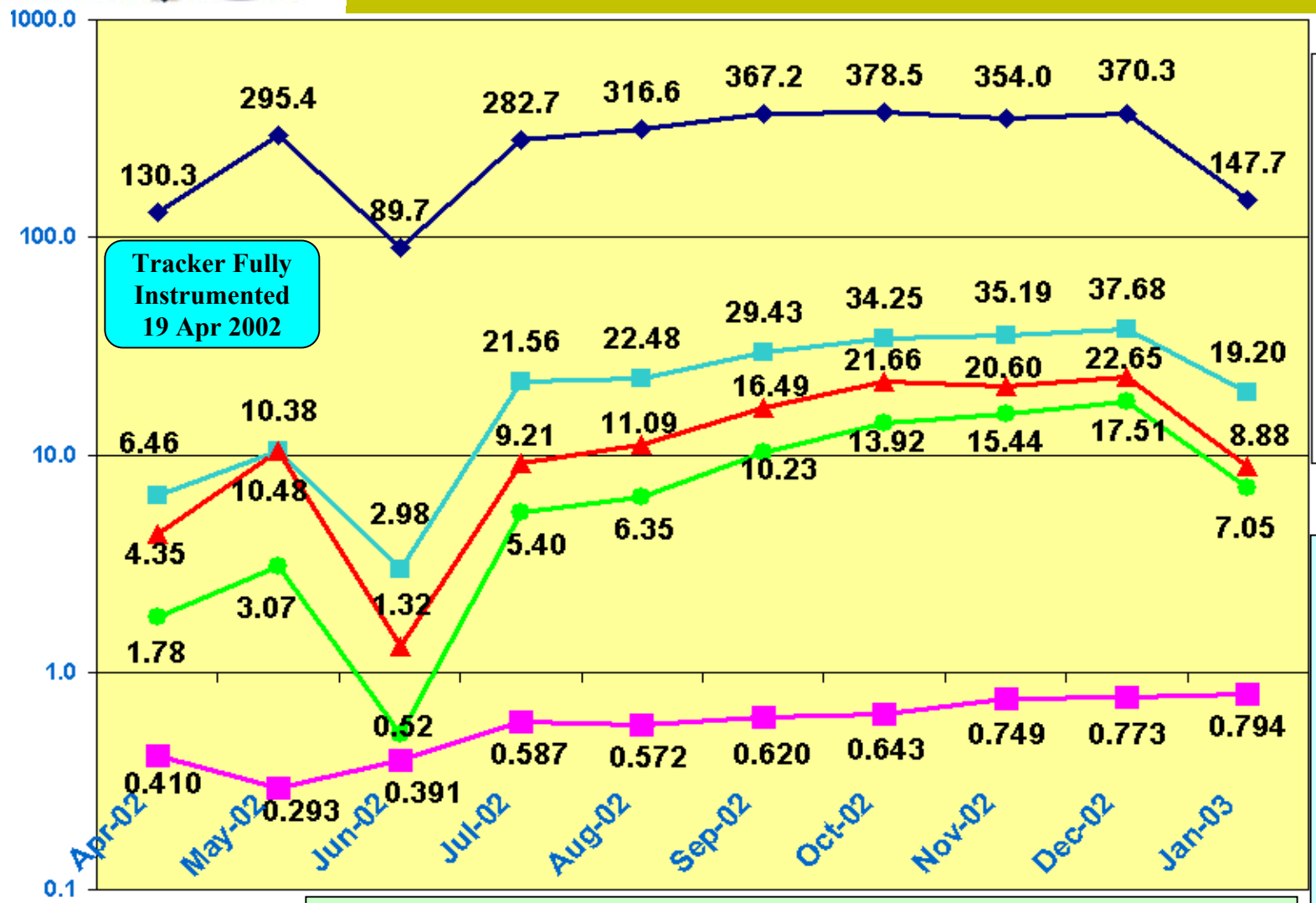
7-8 Oct 2002

I showed this slide at the last Collaboration Mtg - our best data taking L1/L2 rates & performance. The vertical lines represent the frequent SCL inits every 5-10 min.



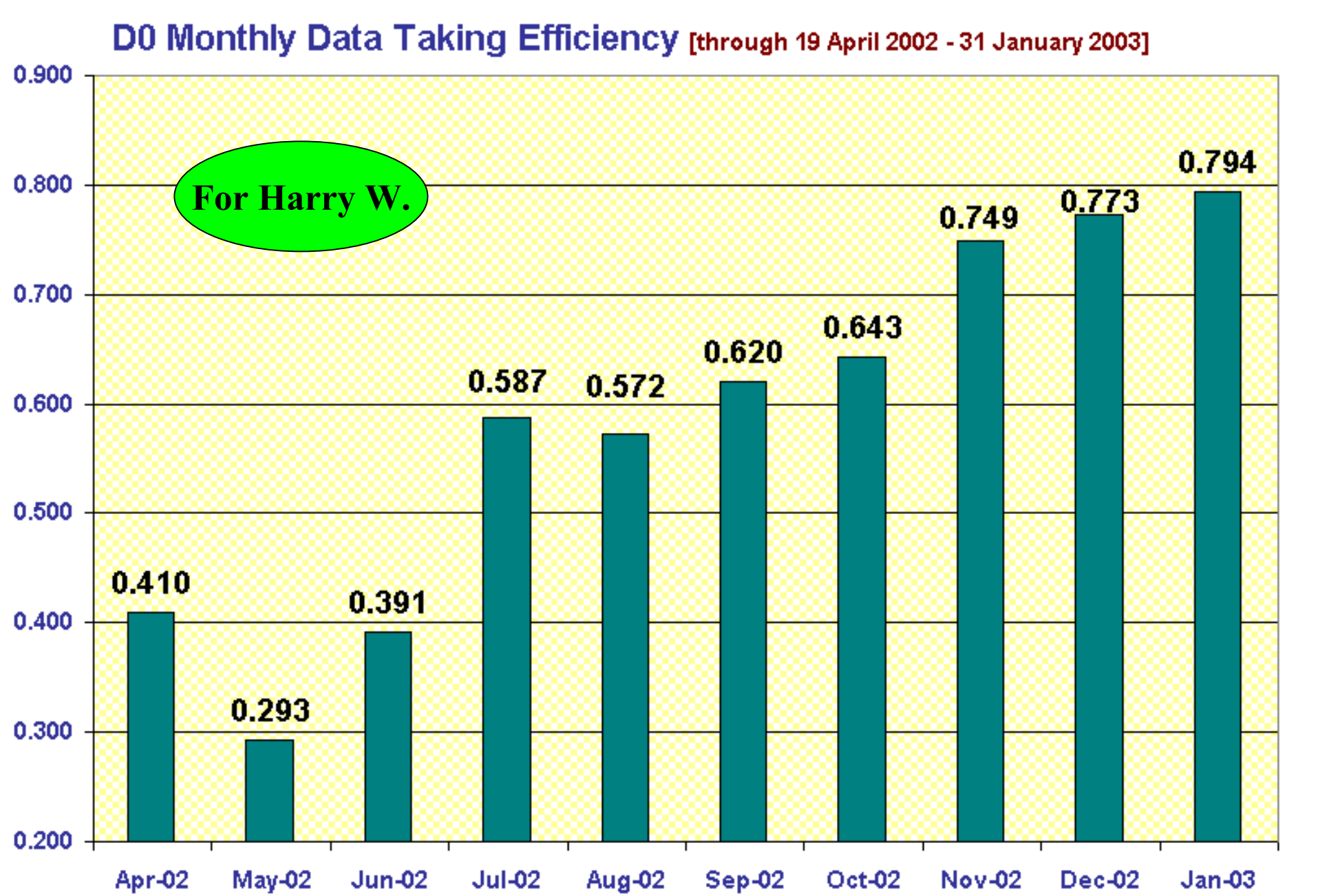
Courtesy of Terry Toole

Data Taking Monthly Summary



YES!
I am using a log scale in order to summarize all the numbers.

Shutdowns in June 2002 & Jan 2003.


D0 Monthly Data Taking Efficiency [through 19 April 2002 - 31 January 2003]
For Harry W.
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.410
0.293
0.391
0.587
0.572
0.620
0.643
0.749
0.773
0.794
Apr-02
May-02
Jun-02
Jul-02
Aug-02
Sep-02
Oct-02
Nov-02
Dec-02
Jan-03

Improved Performance
How did we get there?

- Several major known issues as of last Collaborating Mtg were given the highest priority by the experts
  - SMT HV trips; CFT FEBs; Muon PDT FE Code Crashes & MDT Lost-Sync Errors; CAL ADC errors; L2 Alpha Crashes & Missing Inputs
  - And new ones: Trigger Framework; L1 CAL; Online Buffer Disk
    - Shifters play important role in assisting experts and detecting problems!
- daqAI - Online watchdog which alerts shifters when data flow is interrupted with DECtalk messages
  - May issue automatic SCL inits at least 2x faster than DAQ Shifter
  - Known problems are categorized & deadtime quantified
- Continue to minimize Operator Errors
  - All shifters have checklists to follow
  - Training & documentation is has been improved & refined
  - Global monitoring - particularly with respect to trigger performance
  - Our Mantra: Never hesitate to call an Expert when we have beam!

Data Taking Statistics

Our Best Week - as shown at the AEM Jan 6th 2003

		Normalizable Luminosity (nb-1)				Hours			Norm. Events (k)		Efficiency	
Date	Del	Util	Live	Rec	Physics	Store	Util	Rec	Rec	Physics	Rec	Phys
30-Dec-02	1214.26	1212.05	1111.27	1104.08	1104.08	17.7	17.7	17.4	2225	2225	0.909	0.909
31-Dec-02	181.64	181.43	172.74	172.69	172.69	4.4	4.4	4.3	511	511	0.951	0.951
1-Jan-03	1075.95	1019.90	914.37	905.20	905.20	18.2	17.4	17.1	2430	2430	0.841	0.841
2-Jan-03	326.13	325.77	303.56	303.31	303.31	5.8	5.8	5.7	767	767	0.930	0.930
3-Jan-03	1316.42	1250.20	1066.22	994.22	974.38	21.0	19.9	19.3	2761	2625	0.755	0.740
4-Jan-03	1365.30	1243.80	1048.93	1046.00	1046.00	21.5	19.4	18.7	2898	2898	0.766	0.766
5-Jan-03	1385.81	1378.62	1200.18	1197.12	1197.12	21.7	21.6	21.1	3252	3252	0.864	0.864
	6865.5	6611.8	5817.3	5722.6	5702.8	110.3	106.2	103.6	14844	14708	0.834	0.831

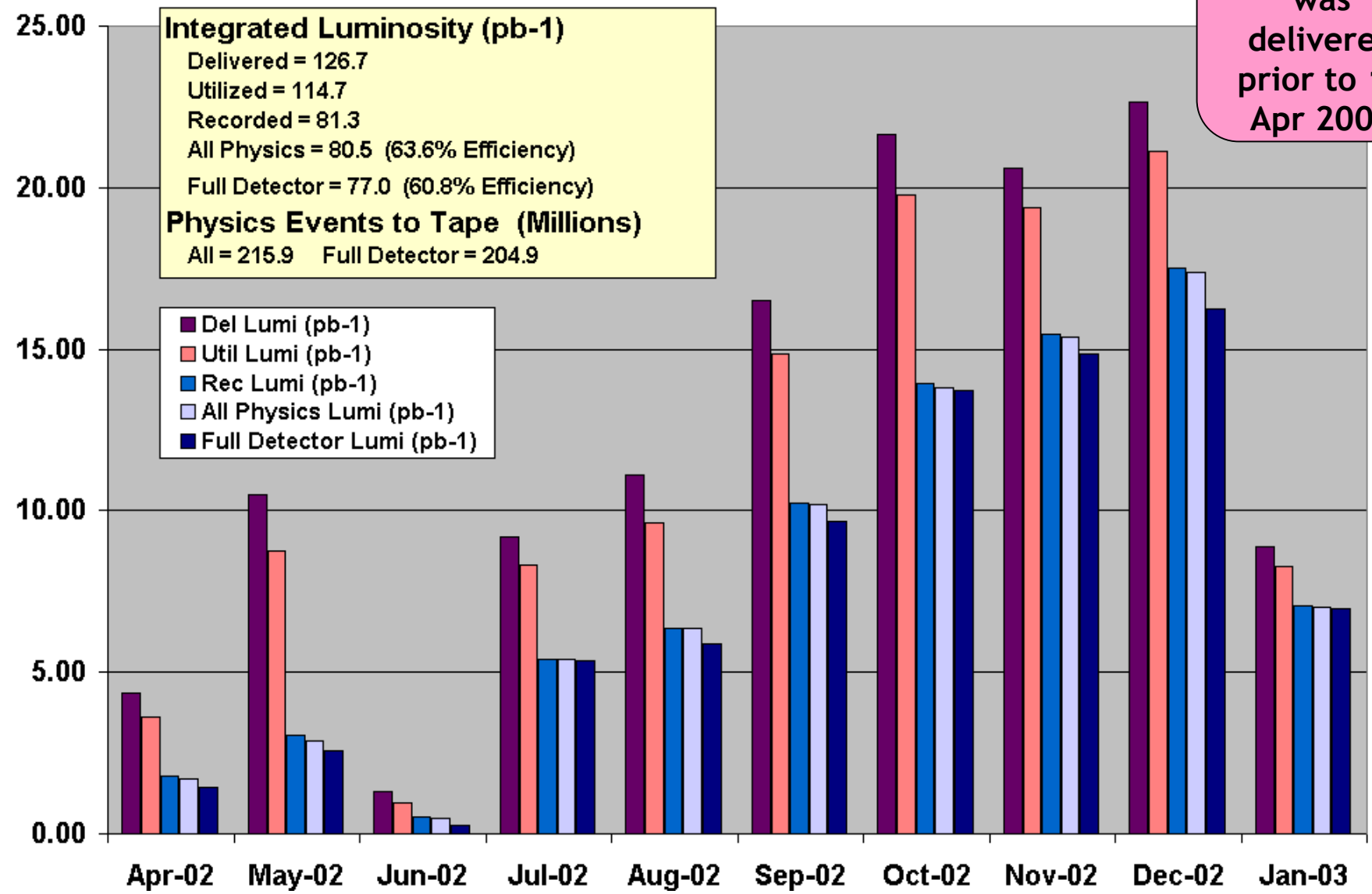
- 1.4 hrs: 16:55 Fri Jan 3rd - Online Buffer disk crashed.
  - The disk was used in the transfer of data into SAM and the event catalog. The crash occurred in the middle of a run, and about 70 nb^{-1} of Recorded Physics Lumi was lost.
- 1.5 hrs: 02:35 Sat Jan 4th - Begin Store 2136 - "Hot" L1 CAL Trigger Towers
  - Random occurrence - problem was not seen during previous store only a few hours earlier. Took some time to diagnose, page expert, disable triggers, etc. We took several inefficient recorded runs throughout this period.
- ~1.0 hr: 50 Run transitions (~1 minute/per)
- ~1.0 hr: 11 Begin or End Store transitions (~5 minutes/per)
- ~2 hrs: Average 2% FEB during physics data taking

The way we take data is now the major source of deadtime

Physics Data Taking

19 Apr 2002 - 12 Jan 2003

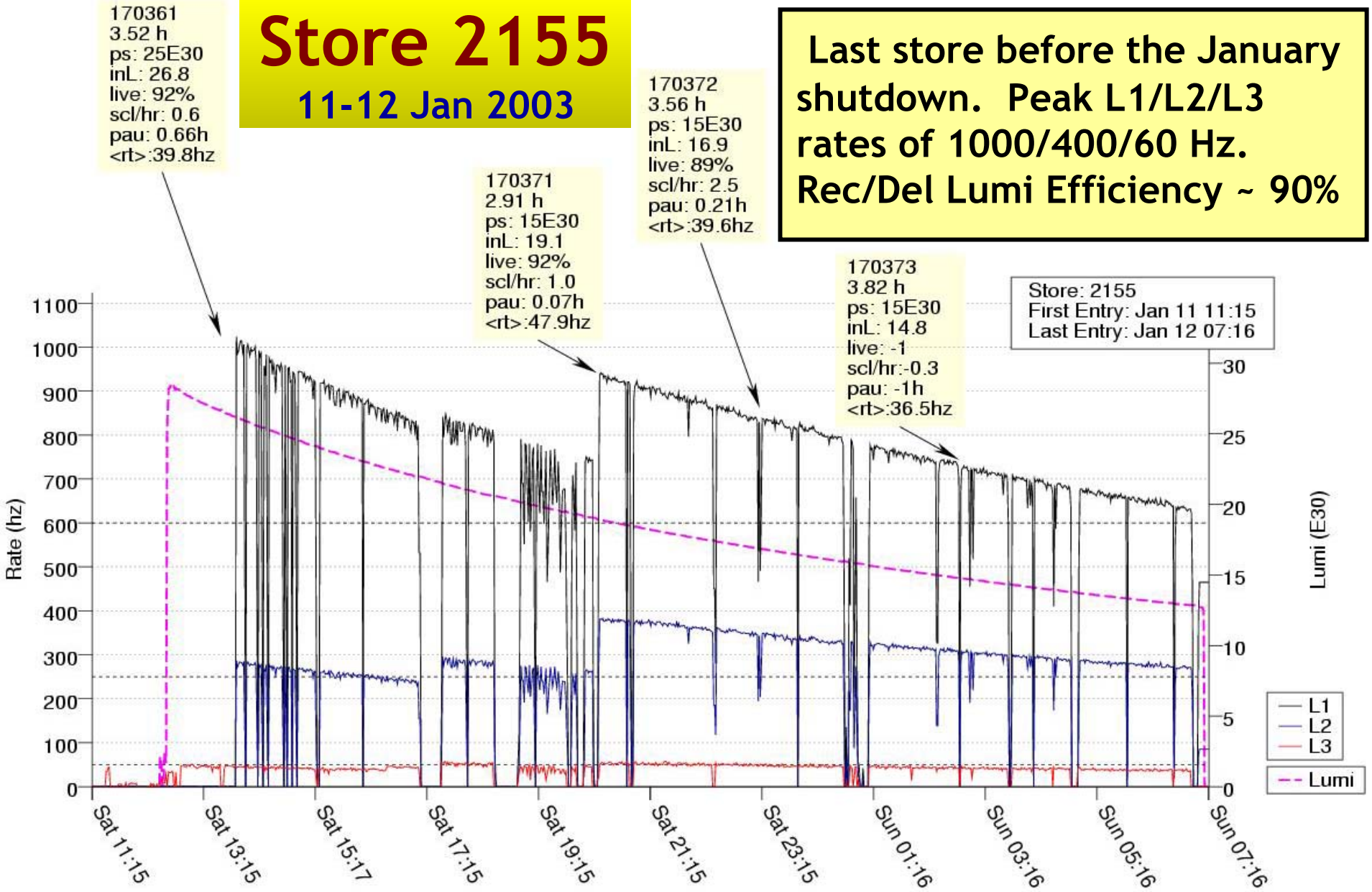
Less than 35 pb^{-1} of luminosity was delivered prior to 19 Apr 2002



Store 2155

11-12 Jan 2003

Last store before the January shutdown. Peak L1/L2/L3 rates of 1000/400/60 Hz. Rec/Del Lumi Efficiency ~ 90%



Shutdown began ~12:00 Jan 12th.

Shutdown Schedule

January 2003

Sun			Wed	Thu	Fri	Sat
12	13 1:00 Lhe JT test 4:00 Surveyors, NEF, SEF, CF 7-7:30 Power outage 7:00 Refrigerator & VLPC warm up starts 8:00 Move shield block from pit door 8:00 Open S B pixel 15:00 Access to South B layer MDT for repairs. Silicon chiller swap. All day - Shut down of Pond Water System All day – T&M pond water filter change	14 7:00 Close S B pixel 11:00 Survey S B pixel 11:00 Open N B pixel erect scaffolding 16:00 Access to North B layer MDT for repairs All day - Pond Water System OFF PM – Pond Water back on All day – T&M pond water filter change	15 7:00 Scaffolding down, Close N B pixel 11:00 Survey Finish S B pixel, start N B pixel 13:00 Open EF south 14:30 Open CF east, CF west, prep cathedrals 16:00 Raise SEC cryo platform, pump VJ's 17:00 Access to Cathedrals 17:00 Refrigerator OFF, purifier isolated All day – T&M pond water filter change	16 AM – Surveyors, start SEC, finish N B pixel, start NEC? 7:00 Pump on He Purifier Expander tie in at HX 11:00 Open EF north 14:00 Remove TLD's on N & S beam pipe 15:30 Slowly Open SEC, Noise testing by D0 Electrical until 19:00. 20:00 SEC gap locked, no access All day-Electricians: Expander All day – T&M pond water filter change	17 7:30 Photography in SEC gap until noon. AM - Surveyors NEC 14:00 Slowly Open NEC, 13:00 Access to south gap 13:00 Photography in NEC gap until 15:30. 15:00 Install scaffolding in NEC gap 16:30 Access to NEC gap EVMF, MV4013H fix VLPC test stand utubes All day-Electricians: Expander tie-in.	18
19	20 LAB HOLIDAY Detector in open configuration.	21 7:30 Photography in NEC gap until noon 13:00 Scaffolding back up NEC gap All day-Welder Expander All day-Electricians: Expndr All day – VLPC test stand Check fixed cryo valves Install SEC gap TLD system	22 7–7:30 Power outage Cool down purifier P& P helium system. Start Ghe Circulation All day-Electricians: Expander tie-in finish Check fit of SEC horseshoe shield Install Luminosity monitor purge/sample lines in SEC & NEC gaps	23 Cool down LHe refrigerator Cool down VLPC cryostat Install NEC gap TLD's.	24 Cool down LHe refrigerator Cool down VLPC cryostat Check C.H. cryo valves 7:00 Prepare SEC gap, magnetic sweep 9:00 Close SEC, noise testing by D0 Electrical. Photography cable bridge outside & in C.H.	25 VLPC cryostat cold Solenoid cold
26	27 Survey closed SEC	28 Survey Finish closed SEC 13:00 Prep NEC gap, magnetic sweep, ICD cover Slowly close NEC	29 AM –Survey closed NEC Install beam pipe TLD's Check A-layer PDT w/CF open	30 Close CF irons Check A-layer PDT's Close EF irons Extend shielding	31 DETECTOR CLOSED AM - Survey EF's, CF's SEARCH & SECURE	FEB 1 No Access? Controlled Access?
FEB 2 No Access? C.A.?	FEB 3 – Tev Tests None or Controlled Access?	FEB 4 – Tev Tests None or Controlled Access Final Search and Secure				

Dipole magnet failure during Tev turn-on. First post-shutdown physics store was delivered on Feb 10th.

Silicon

- Major problems came from utilities
  - Interface Board Power Supply failures
  - 2 Interface Board Crates air-water heat exchanger leaks
- Issues still under investigation
  - Pedestal shifts as a function of beam crossing (~2 ch)
  - Extra noise on Micron F-wedges. Not present or their Eurysis counterparts
- During January shutdown
  - Fixes to electronics increased number of operating channels from 88% to 92%
  - Installation of easy removable TLD badges for radiation dose monitoring
- Plan for the next ~6 months
  - Understand reasons of split pedestals
  - Speed up readout (see trigger section)
  - Monitor radiation aging (~70krad as of today)

Before January 2003 shutdown:

Barrels: 48/432 = 11%

F-disks: 27/288 = 9%

H-disks: 29/192 = 15%

Total: 104/912 = 11.5%

As of 01/24/2003:

Barrels: 31/432 = 7%

F-disks: 16/288 = 5.5%

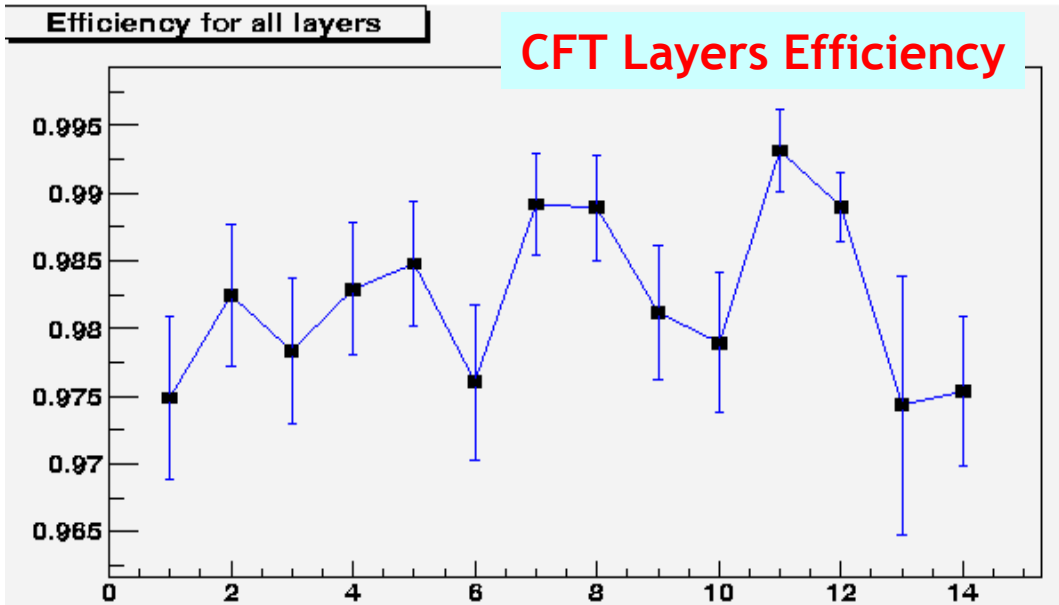
H-disks: 26/192 = 13.5%

Total: 73/912 = 8%

CFT

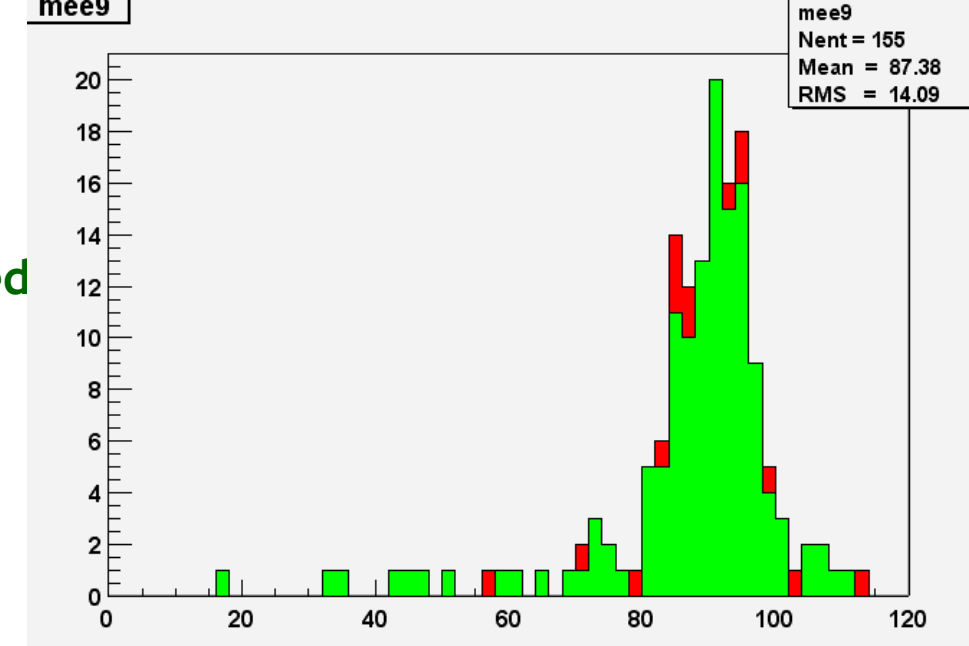
- Pre-shutdown operations
  - Minimal detector downtimes
  - Performance was satisfactory
    - ~99% of CFT channels operational
    - Layer efficiencies are ~98%
- Shutdown activities
  - Cryostat warmup to clear out impurities after 20 months of continuous operations
    - Dilute contaminates in cassette space
    - User purer helium in future
  - Improving readout
  - Testing & commissioning Central Track Trigger
    Shutdown activities
    - Major task for the next few months

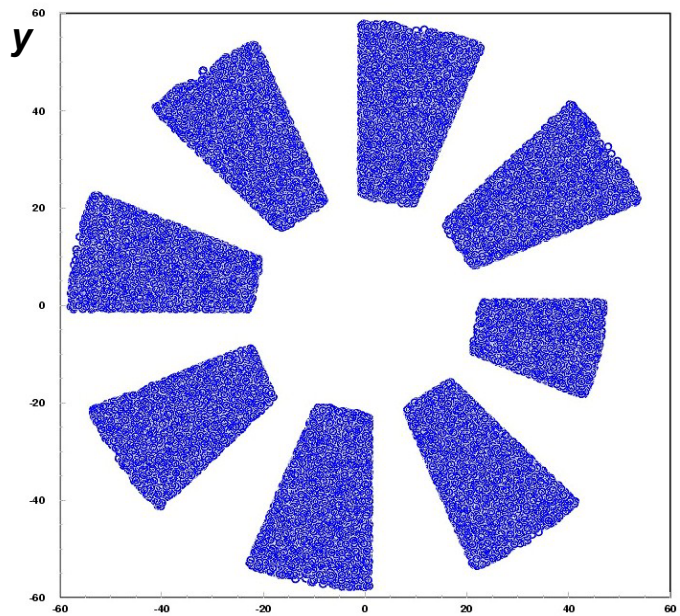
	Axial layer	Axial dead	Stereo layer	Stereo dead
Layer	Efficiency	channels	Efficiency	channels
A	98.9%	9(0.4%)	97.7%	1(0.0%)
B	99.1%	1(0.0%)	97.2%	7(0.2%)
C	99.1%	1(0.0%)	96.7%	9(0.2%)
D	99.2%	1(0.0%)	98.2%	5(0.1%)
E	97.1%	6(0.1%)	97.91%	1(0.0%)
F	99.6%	3(0.1%)	97.7%	3(0.1%)
G	99.2%	3(0.0%)	96.0%	6(0.1%)
H	*****	1(0.0%)	*****	13(0.2%)
All	98.9%	25(0.1%)	97.3%	45(0.2%)



Preshowers

- Central Preshower
  - MIP studies - Singlet peak identified
  - Fixed map errors
    - Sensitive to swaps & rotations of 16 channel connectors
    - Discovered five & fixed in p14 software map
  - EM id efficiency/fake rate
    - Efficiency >90%
    - Rejection >20%
- Forward Preshower
  - Major effort in developing monitoring & reco tools
    - Online: fps_examine, debugging & improvements
    - Offline reconstruction: studying layer-to-layer clustering algorithm with data
  - Shutdown: resolved waveguide installation & routing problems



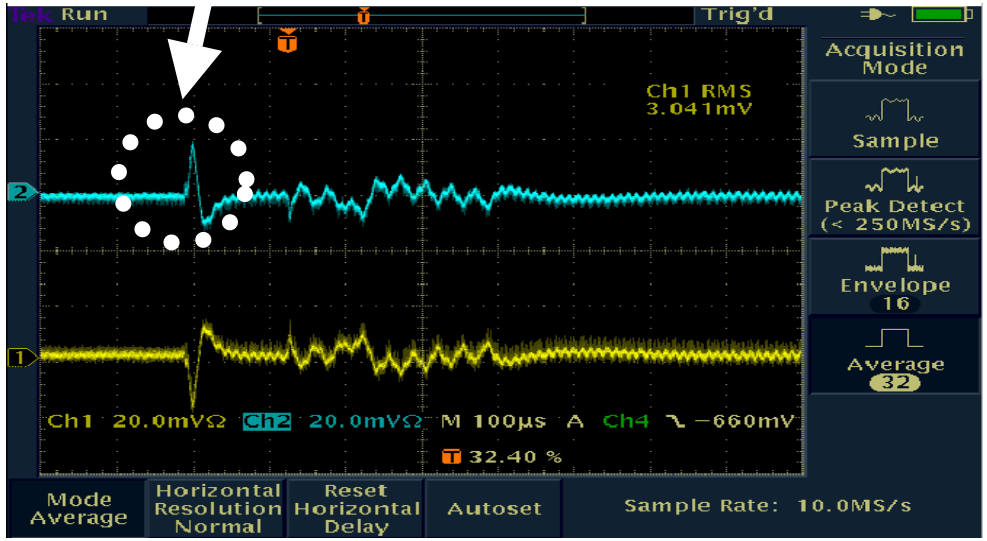


Offline: fps_reco u,v Cluster Matching

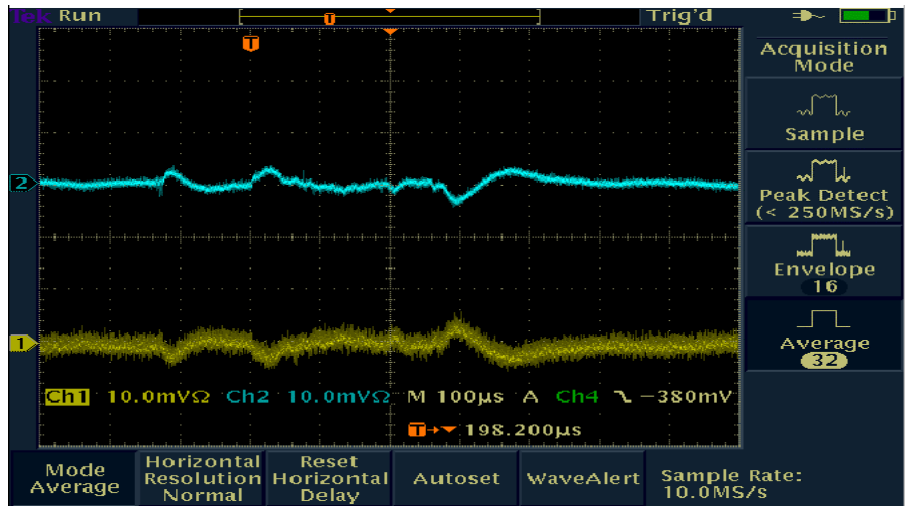
Calorimeter & ICD

- Stable before shutdown
  - < 0.1% of problematic channels
- Major jobs during shutdown
  - Modified ~1500 BLS boards to reduce trigger pick-up noise
    - Down to ~1 GeV level
  - Replaced preamp cooling fans in cathedral area *(preventative)*
    - Air flow sensors are planned to be installed on all fans during summer shutdown
  - Installed boards for full eta Level 1 trigger coverage
- Plans for the next 6 months
  - Commission Level 1 trigger with full eta coverage
- ICD - fixed ~ 30 dead/weak channels
  - Replaced PMTs, HV bases, cables
  - 4/378 channels remain marginal

Fixed Aug 27th during 12 hour Supervised Access!



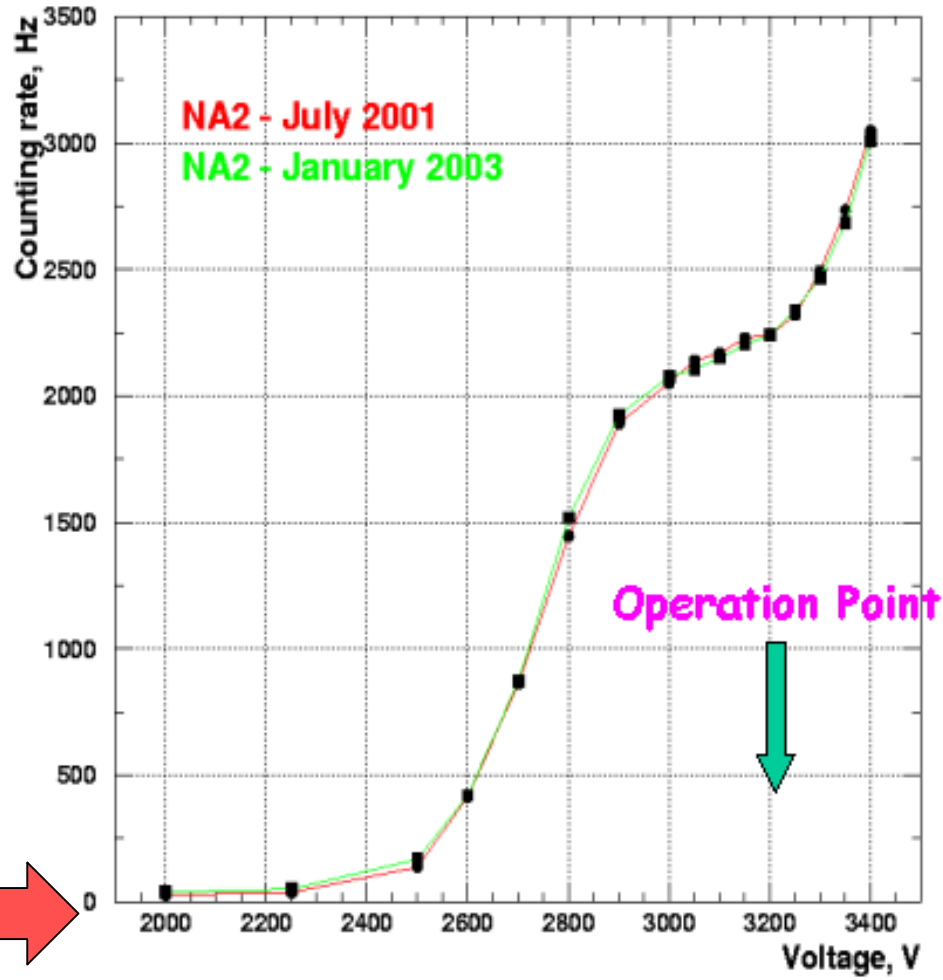
Cross talk before any modifications



After new active resistor pack was put in during Jan Shutdown

Muon System

- Stable operation of detectors
  - readout crashes have been affecting overall D0 trigger rate capabilities over last 4 months
- January shutdown
  - Two MDT broken wires fixed
    - Failure rate is ~3 wires per 2 years of operation out of 50,000
  - Multiple minor repairs to FE electronics, HV system, etc.
- No aging of forward detectors w/highest occupancies were observed
- Plans for the next ~6 months
  - Resolve problems with PDT readout
    - Indication that crashes have been resolved after bug fix
    - … but we can clearly see it is too slow to run above ~600Hz



Forward Proton Detector

- In commissioning stage before shutdown with temporary "stand alone" DAQ system and triggering
- Work during January shutdown
  - A2 castle vacuum leak repaired, vacuum performance good enough that baking deemed not necessary by BD experts
  - Surveying redone
  - Various pot motion tests and upgrades done, some new detectors installed and tested, cable tests, etc.
  - 2 additional interfaces between FPD cables and AFE's
  - 2 new AFE's installed
- Current status
  - The 10 Phase I FPD detectors (vertical pots and dipole pots) are now in
- Plans for the next ~6 months
  - Commission integrated FPD (start taking data with AFE's)
  - Add new AND/OR terms and FPD triggers
  - Incorporate LM system, DFE boards, and TM
  - Periodic accesses for maintenance

Mech & Elec Support

- Detector Opening & Closing sequence/work very successful
  - Silicon noise study added extra work in opening/closing ECs
  - Kept us on schedule despite some minor setbacks
    - Muon PDT problems
    - Poor Luminosity cabling
    - AC power cut to CAL cooling
    - Silicon cooling line short
- Changed pond water filter system
- Shut down, warm up, cool down of helium purifier, helium refrigerator, VLPC, and Solenoid
- Measured Helium contamination in collision hall & near Lumi PMTs
  - Steps taken to reduce levels to less than 40 ppm
- Provided manpower and/or logistical support for most jobs
  - BLS card modifications
  - Cal preamp fans
  - Rewiring SMT 1553 cables and reprogramming Sequencer Controllers
  - Repaired/replaced numerous power supplies
- Cathedral west water leak fixed
- Normal toroid and solenoid preventative maintenance
- L2TSE noisy fan traced to dead rodent in fan cage. Fixed.

And much, much more. Reports from Russ Rucinski & John Anderson posted to Operations Mtg page.

Control Room Shifts Part I

- Staff shifts for Captain, DAQ, Calorimeter, Muon, Silicon, Tracker/Preshower and Global Monitor
  - Schedule all shifts 24 hours a day, 7 days a week
    - Tevatron schedule is conditional & less than a week in advance
      - D0 Shift Schedules need to be planned > 1 month in advance so non-resident collaborators can make travel arrangements
    - Beam delivery is unpredictable, so we have:
      - Revised rules which may allow Detector & GM Shifters to go on-call during extended periods (>4 hours) with no beam and no shifter tasks to perform
  - Followed a modified shift schedule during shutdown
    - DAQ was 24/7; Captains 2 x 6 hours/day; SMT & CFT slotted only day and eve shifts; CAL & MUO had on-call expert; GM cancelled
    - We will likely follow similar scheduling for future shutdowns
- Shift tallies are available from 1 Apr 2001 – 31 Dec 2002
  - By Shift, Shifter, Institution, Month, Quarter, Year & Total
  - Control Room Shifts, on-call Expert Shifts, SAM Shifts

Control Room Shifts Part II

- Global Monitor Shifts = Remote Collaborator Shifts!
  - See Friday's talk by Pushpa Bhat
- What about Shift Consolidation?
  - We are still commissioning - mainly trigger systems
    - L1 CTT, L1 CAL, L1 Muon and FPD
  - We just finished a four week shutdown so there will be few weeks of renormalization & troubleshooting
    - Did we introduce new problems with the software/hardware changes?
  - Merge Calorimeter & Muon Shifts by mid to late March
    - Requires moving FPD Shift Tasks (currently done by CAL)
    - Verify that L1 CAL noisy triggers & PDT crashes are resolved
  - Longer term we are planning on FIVE control room shifts during normal data taking: Captain, DAQ, GM & 2 Detector Shifters
- More will be said on Shifters & Experts at the Institutional Board meeting this evening

More on DAQ Shifts

See - http://www-d0.fnal.gov/~alstone/d0_private/daq_manpower.txt

- The density is high ~40-45 Shifts in 16 weeks
  - Will require playing "musical chairs" with shifters from low density detector shifts (3-4/mo) to DAQ Shifts (1 week out of 3) & vice versa
  - Many current & past DAQ Shifters have taken or are taking CAL, MUO, CFT, SMT, GM and even Captain Shifts
- By April 2003, over 50 people will have completed a DAQ tour of duty, so the pool of available DAQ Shifters continues to diminish
  - It is necessary to get manpower commitment 6, 8 even 12 months in advance
  - DAQ Shifters need to be local for 3-4 months

Contact me w/names & dates (choose one).

Remember we need to man the DAQ Shift 24/7 even during holidays.

```
5  May 2003 - Shifter C - Start eves (16:00-24:00) - End Aug 24 day
12 May 2003 - Shifter D - Start days (08:00-16:00) - End Aug 31 owl
19 May 2003 - Shifter E - Start days (08:00-16:00) - End Sep 7  owl
2  Jun 2003 - Shifter F - Start days (08:00-16:00) - End Sep 21 owl
28 Jul 2003 - Shifter G - Start days (08:00-16:00) - End Oct 16 owl
18 Aug 2003 - Shifter H - Start owls (00:00-08:00) - End Dec 7  eve
25 Aug 2003 - Shifter I - Start days (08:00-16:00) - End Dec 14 owl
1  Sep 2003 - Shifter K - Start days (08:00-16:00) - End Dec 21 owl
8  Sep 2003 - Shifter L - Start eves (16:00-24:00) - End Dec 28 day
15 Sep 2003 - Shifter M - Start days (08:00-16:00) - End Jan 4  owl
22 Sep 2003 - Shifter N - Start days (08:00-16:00) - End Jan 11 owl
6  Oct 2003 - Shifter O - Start days (08:00-16:00) - End Jan 25 owl
1  Dec 2003 - Shifter P - Start days (08:00-16:00) - End Mar 21 owl
22 Dec 2003 - Shifter R - Start days (00:00-08:00) - End Apr 11 eve
29 Dec 2003 - Shifter S - Start days (08:00-16:00) - End Apr 18 owl
```

Summary

- Quality & quantity of physics has improved!
  - Data taking efficiency >75% over last 3 months
  - L1/L2 trigger rates are a factor of two higher
  - All systems are more stable
- Four week shutdown was very successful
  - All major sub-system goals were met, some exceeded
  - We resumed physics data taking within ten minutes of the first post-shutdown store & just a few minutes into the second store
- Major commissioning activities for the next six months
  - Trigger: Fiber Tracker, Silicon displaced vertex, Full eta L1 CAL
  - Forward Proton Detector in global readout
  - Increase in Level 1 (~2.5 kHz) and Level 2 (~1 kHz) trigger rates
- Next target: >85% monthly data taking efficiency

Best Day Sorted by Recorded Luminosity

Tevatron is regularly delivering > 1 pb^{-1} and D0 is more efficient at recording it!

Date	Stores	Delivered Lumi (nb-1)	Recorded Lumi (nb-1)	In Store (hrs)	Events (in k)
2003 Jan 05	2136, 2138	1385.81	1197.12	21.7	3252
2002 Dec 15	2074, 2076	1379.72	1186.35	23.3	2302
2002 Dec 30	2114	1214.26	1104.08	17.7	2225
2002 Nov 09	1953	1353.38	1100.60	20.5	2200
2002 Dec 07	2045	1353.20	1089.94	21.9	2050
2003 Jan 11	2153, 2155	1374.14	1074.94	21.8	2463
2003 Jan 04	2136	1365.30	1046.00	21.5	2898
2002 Dec 12	2070	1393.93	1026.42	20.0	2064
2002 Dec 16	2076, 2078	1223.30	1012.89	20.7	2388
2003 Jan 03	2134	1316.42	994.22	21.0	2761
2002 Nov 26	1999	1429.39	989.25	20.4	1963
2002 Oct 28	1916, 1918	1342.23	976.16	20.8	1847
2002 Oct 27	1914, 1916	1279.41	971.89	21.5	2022
2002 Nov 24	1995, 1997	1198.14	958.04	20.2	2309
2002 Dec 24	2097, 2099	1147.24	956.14	19.6	2169
2002 Dec 08	2047, 2049	1184.64	926.59	19.9	1975
2003 Jan 01	2121, 2123	1075.95	905.20	18.2	2430

Best Runs Sorted by Data Taking Efficiency: Recorded/Delivered Lumi

16 or 20 Runs from last month of Data Taking!

Run	Store	Start Time	Delivered Lumi (nb-1)	Initial Lumi (E30)	Shift Crew	Efficiency	Duration (hrs)	Events	Rate to Tape (Hz)
170333	2153	2003 Jan 11 03:10:44 CST	207.47	14.61	OWL	96.7%	4.26	501487	32.6
169895	2114	2002 Dec 30 23:10:44 CST	182.69	12.92	EVE & OWL	96.0%	4.25	458561	31.6
164095	1756	2002 Sep 15 18:19:15 CDT	168.70	13.11	EVE	94.4%	4.02	401371	27.6
169793	2105	2002 Dec 26 22:50:51 CST	270.84	23.12	EVE & OWL	94.0%	3.65	433395	32.8
169778	2103	2002 Dec 26 08:55:07 CST	183.88	13.49	DAY	94.0%	4.06	449298	30.6
169736	2099	2002 Dec 25 01:25:15 CST	174.15	13.09	OWL	93.8%	3.96	427398	29.8
169893	2114	2002 Dec 30 16:18:12 CST	182.23	17.22	EVE	93.7%	3.14	352870	31.2
169649	2091	2002 Dec 21 11:11:55 CST	113.64	10.76	DAY	93.7%	3.28	380950	32.2
169260	2076	2002 Dec 15 04:18:32 CST	304.75	29.97	OWL	93.5%	3.17	389822	34.1
169795	2105	2002 Dec 27 06:39:25 CST	162.66	14.92	OWL & DAY	93.2%	3.67	416459	31.5
170246	2146	2003 Jan 09 06:56:50 CST	127.81	11.92	OWL & DAY	93.2%	3.16	463540	40.7
169894	2114	2002 Dec 30 19:26:58 CST	187.32	15.05	EVE	93.0%	3.72	481175	35.8
165008	1795	2002 Sep 27 11:08:10 CDT	128.42	9.91	DAY	93.0%	3.89	410955	29.4
170041	2138	2002 Jan 06 00:10:12 CST	127.06	11.75	OWL	93.0%	3.15	452373	39.7
169773	2103	2002 Dec 25 16:17:52 CST	347.29	30.55	EVE	92.9%	3.55	481836	37.6
164096	1756	2002 Sep 15 22:21:33 CDT	131.99	10.36	EVE & OWL	92.9%	3.87	404159	28.9
169200	2072	2002 Dec 13 03:49:22 CST	344.81	28.74	OWL	92.8%	3.80	434727	31.7
169931	2123	2003 Jan 02 01:37:22 CST	191.17	16.49	OWL	92.5%	3.48	483934	38.5
169774	2103	2002 Dec 25 19:52:55 CST	318.70	24.25	EVE	92.3%	4.05	482579	33.1
164097	1756	2002 Sep 16 02:14:28 CDT	113.71	8.64	OWL	92.0%	3.96	410163	28.7

Best Runs Sorted by Initial Luminosity

A different measure of our data taking performance. Are we ready when the Tevatron delivers a good store?

Run	Store	Start Time	Delivered Lumi (nb-1)	Initial Lumi (nb-1)	Shift Crew	Duration (hrs)	Events	Rate to Tape (Hz)
167806	1953	2002 Nov 08 23:11:04 CST	385.67	32.53	EVE & OWL	3.81	509666	37.2
166992	1921	2002 Oct 29 12:43:24 CST	328.31	31.02	DAY & EVE	3.33	483851	40.3
169773	2103	2002 Dec 25 16:17:52 CST	347.29	30.55	EVE	3.55	481836	37.6
166332	1865	2002 Oct 17 11:40:08 CDT	242.09	30.45	DAY	2.45	281690	31.9
168691	2015	2002 Dec 01 00:29:36 CST	381.97	30.25	OWL	4.03	456037	31.3
166928	1918	2002 Oct 28 13:24:43 CST	360.94	30.18	DAY & EVE	3.88	441922	31.7
169260	2076	2002 Dec 15 04:18:32 CST	304.75	29.97	OWL	3.17	389822	34.1
169687	2094	2002 Dec 22 17:07:03 CST	377.28	29.90	DAY & EVE	4.01	476780	33.0
169171	2070	2002 Dec 12 04:43:36 CST	224.45	29.76	OWL	2.24	279360	34.4
169889	2114	2002 Dec 30 06:20:22 CST	271.44	29.72	OWL & DAY	2.77	385722	38.5
165775	1834	2002 Oct 08 11:44:41 CDT	311.35	29.15	DAY	3.54	419687	33.0
168149	1971	2002 Nov 16 09:57:01 CST	270.70	28.99	DAY	2.88	357419	34.3
168725	2019	2002 Dec 02 10:38:39 CST	281.69	28.86	DAY	3.01	313385	28.9
170034	2138	2003 Jan 05 03:05:21 CST	304.88	28.80	OWL	3.28	475756	40.2
167883	1955	2002 Nov 10 16:16:37 CST	341.60	28.78	EVE	3.69	440771	33.0
169200	2072	2002 Dec 13 03:49:22 CST	344.81	28.74	OWL	3.80	434727	31.7
168964	2045	2002 Dec 06 23:53:19 CST	239.94	28.45	EVE & OWL	2.55	299225	32.4
164605	1787	2002 Sep 24 06:17:29 CDT	333.93	28.14	OWL & DAY	3.99	470542	32.7
165757	1832	2002 Oct 07 16:12:14 CDT	175.04	28.03	EVE	2.01	215017	29.7

Shutdown Goals Part I

Repairs, Upgrades, Maintenance

- Silicon
  - Fix ~5% of problematic channels
  - Replace some low reliability boards
  - Upgrades of firmware and software
  - Retrieval of TLD badges and installation of new ones
- Fiber Tracker & Preshowers
  - Warm up of cryostat
  - Move of some VLPC cassetes
  - Work on CTT electronics
  - FPS fiber bundles moves
  - Firmware upgrade
- Calorimeter
  - Modifications to 1500 BLS cards (reduction of trigger noises by factor of ~2)
  - Pre-amp fans replacements
  - Finishing L1CAL full rapidity coverage
- Inter Cryostat Detector
  - Radiation source test of North EC to check mapping & insure all tiles and cables are working
  - Replace ~10% of dead or marginal PMTs (from Run I) with new tubes (same model)
  - Swap out ~3% of faulty electronics

Shutdown Goals Part II

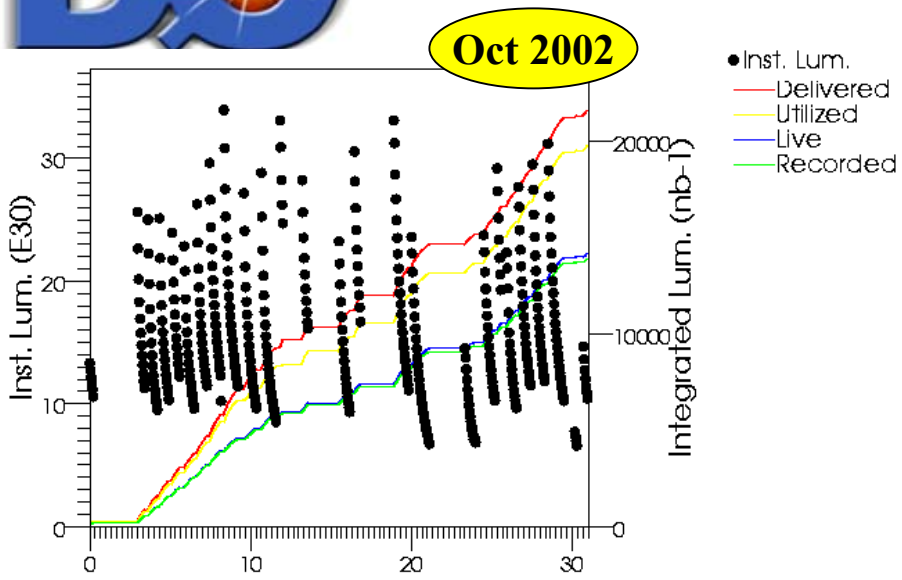
Repairs, Upgrades, Maintenance

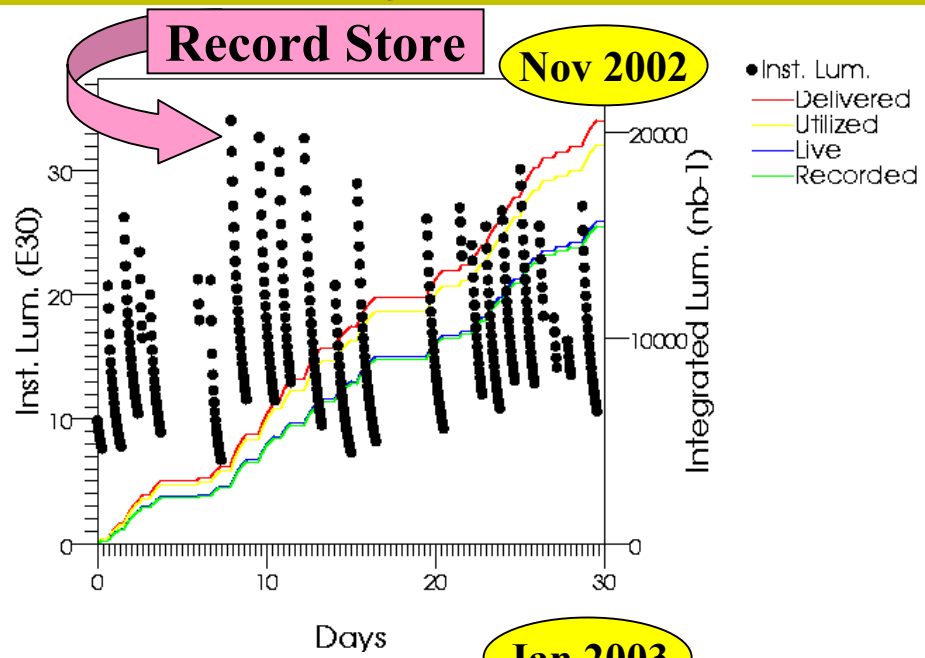
- Luminosity
  - Purge gas for PMTs (against He)
- Muon
  - Fix broken wires in MDTs
  - Replace failed PMTs/bases in trigger counters
  - Upgrades to PDT firmware and software
- L1 Muon
  - Repair power supplies
  - Fix to ~5% cables from CTT
- Forward Proton Detector
  - Repairs to pots in the tunnel
  - Connection of detectors to D0 AFEs and DAQ
- L2
  - Non-lock step mode
    - Reduce global FEB to <0.1%
  - New lookup tables
- Upgrades to online system
- Lot of infrastructure work by Mechanical & Electrical Operations

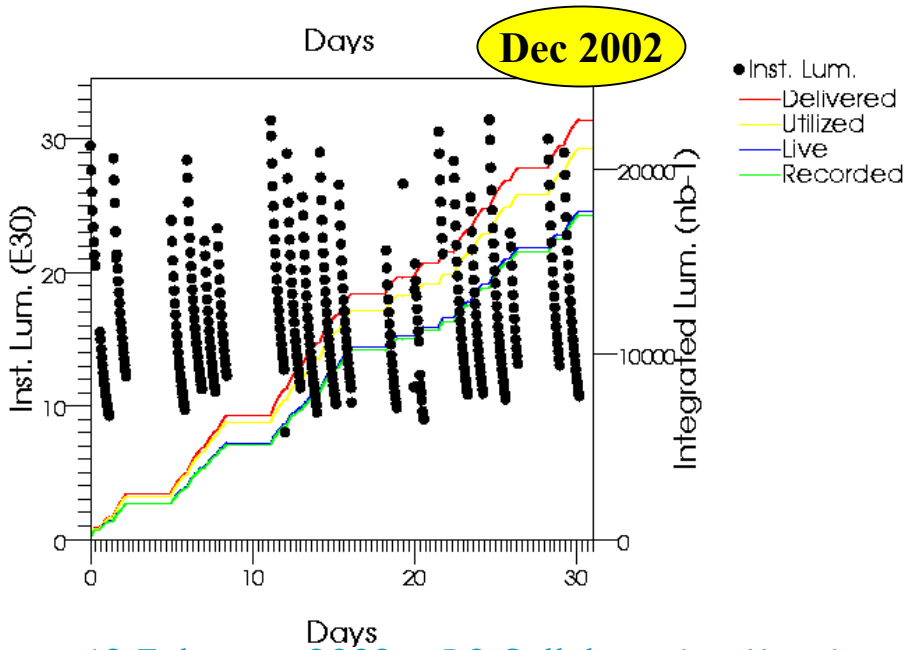
Following will be covered Friday morning

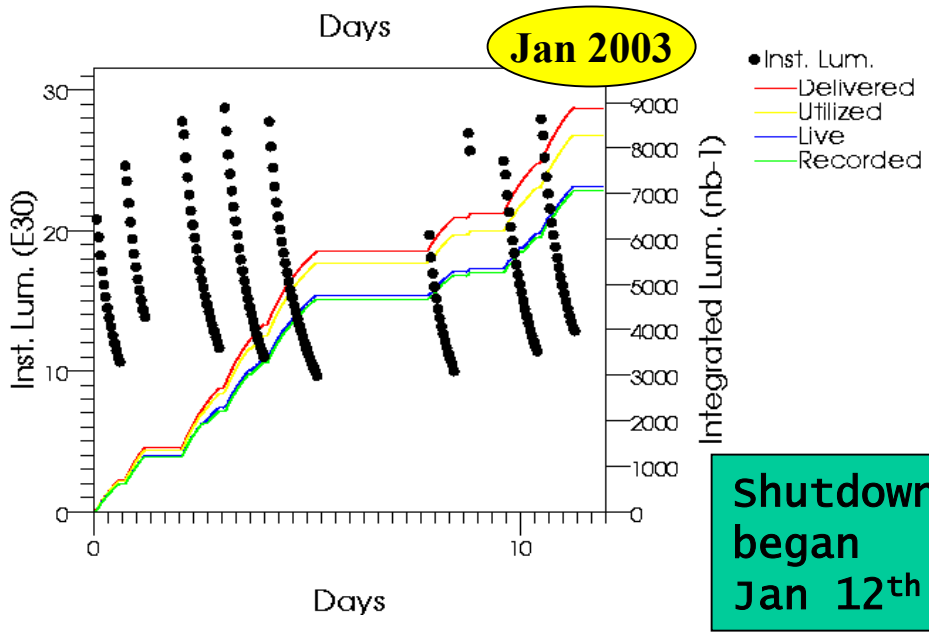
- Trigger Status Report
  - Ron Lipton
- Luminosity System
  - Harry Weerts

October 2002 - January 2003 Stores









Shutdown began Jan 12th